

STRUCTURAL GEOLOGY AND TECTONICS DIVISION Newsletter

Volume 31. Number 2

September 2011

Chair's Message

As the soon-to-be outgoing Chair, I want to thank the members of SG&T for their engagement and support. Over the past few years the Division Management Board has worked hard to make some much-needed changes, and to develop new initiatives. A few examples include initiating a Foundation fund for student support, designing new solid-metal plaques for Division awards, initiating a Keynote Lecture series, taking on joint management of the new Laubach Award with the Sedimentary Geology Division, starting a Facebook site that now has more than 5,000 fans, and increasing membership dues for the first time in many years. Below are some newsletter highlights. Further details for some of these highlights can be found in the following pages. Thank you for this opportunity to serve, and I look forward to seeing many of you in Minneapolis!

1. New Board Members! As you know we had a ballot this year to elect a new Second Vice Chair and a new Secretary/Treasurer. It is a pleasure to remind you that our new Second Vice Chair is Andrew Meigs of Oregon State University, and our new Secretary/Treasurer is Yvette Kuiper, who has just moved from Boston College to the Colorado School of Mines. Andrew and Yvette will take up their duties after the annual meeting in Minneapolis.

2. Career Contribution Award. This year's CCA goes to Richard H. Sibson for his many important contributions to our knowledge of the structure and mechanics of crustal fault zones. Rick plans to attend the SG&T awards ceremony at the annual meeting in Minneapolis, and will receive one of our handsome new bronze plaques. More information can be found below.

3. Outstanding Publication Award. This year we are doing something a bit different by presenting the OPA to a pair of papers published by Basil Tikoff and Haakon Fossen in 1993. Both Basil and Haakon will be attending the SG&T awards ceremony at the annual meeting in Minneapolis, and both will receive one of our handsome new aluminum plaques. More information can be found below.

4. Laubach Award. This year the *Stephen E. Laubach Structural Diagenesis Research Award* goes to Dr. Veerle Vandeginste, who is a postdoctoral researcher at Imperial College, London. Veerle's project investigates the structural control on calcite and barite cementation in the carapace of a salt dome. She is planning to attend the annual meeting in Minneapolis where she will receive the award. Management of the award alternates annually between SG&T and the Sedimentary Geology Division, and this year the award will be presented by SGD at their awards ceremony.

5. SG&T Student Fund Update. The SG&T Student Fund is a GSA Foundation fund that will be used to support student activities. This is the Division's first Foundation fund and it currently stands at approximately \$35,000. We are close to recovering our initial costs of the caps and water bottles that we traded for donations at the 30th Anniversary Symposium last year, and the Rite-in-the-Rain field books that are currently for sale at the GSA on-line bookstore. At the Minneapolis meeting, we will have an exhibit booth where we will continue to exchange caps or bottles for donations of at least \$20 (preferably more), and the field books will also be sold there. We will also be taking donations in exchange for caps and bottles at the SG&T business meeting like last year. We took in nearly \$2,000 in donations last year without an exhibit booth, so hopefully we can double that this year! In early 2012 we will deposit all proceeds in excess of our initial outlays into the student fund. Once all the field books are sold, the total profit will be approximately \$4,500. Add to that any donations that we receive in exchange for caps and bottles from here forward. I am hopeful that, once all the items are exchanged/sold, we will be able to contribute more than \$7,000 to the fund. Not a bad fund-raising effort! Please consider making a generous donation, and/or stocking up on field books! More information can be found below.

6. SG&T Keynote Lecturer. This year's Keynote Lecture will be delivered by Professor Louis Moresi from Monash University, Australia. The lecture entitled 'Intuitive Numerical Modeling in Structural Geology and Tectonics' will be presented in Session T22 'Deformation of the Lithosphere: Field Observations, Experimental Investigations, and Numerical Studies I'. Over the past 15 years Louis has made significant contributions to the development of open source numerical codes and frameworks that make computational tectonics available to all geologists. Please attend the Keynote Lecture this year in Minneapolis! More information can be found below.

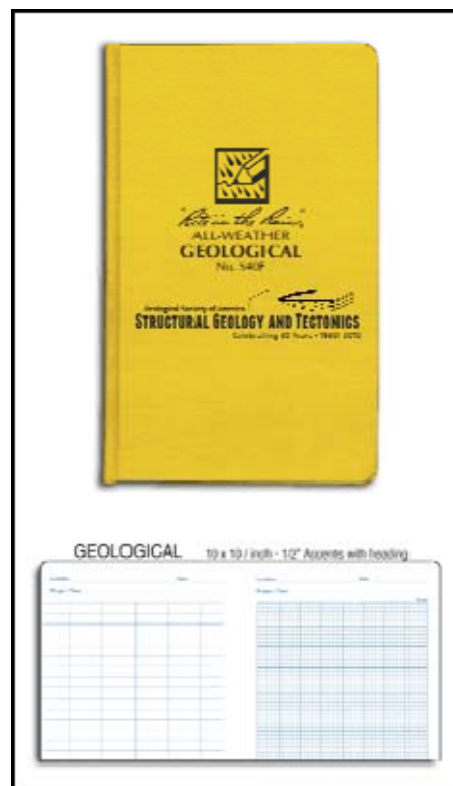
7. Increase in Dues. This year the membership voted to increase dues. Starting in the membership calendar year of 2012, professional members will pay \$10 per year instead of \$8, and student members will pay \$5 instead of \$3. The increased dues will help the Division to better serve its members, particularly its student members. Thank you for your support in this effort.

8. The People Behind the 2011 Meeting. A well-balanced and organized technical program at the Annual meeting doesn't just spontaneously appear, but is the result of a lot of hard work by two committees. As of last year, the SG&T Program Committee now consists of the First and Second Vice Chairs of the SG&T Board, the Division's two representatives to the GSA Joint Technical Program Committee, and one or two "local" people who work where the meeting will be held. The job of the Program Committee is to come up with 3-5 sessions that the committee feels should be developed for the annual meeting, and then find people willing to promote and organize those sessions. For the Minneapolis meeting, the Program Committee was **Scott Johnson, Ron Bruhn, Dave West, Phil Resor, Donna Whitney and Christian Teyssier**. In addition to our SG&T Program Committee, every Division must have 2 representatives on the GSA Joint Technical Program Committee, which is the committee that sorts out all the abstracts and sessions for the annual meeting. Having done this job twice, I can tell you that it is complex and time consuming. **Dave West and Phil Resor** are the JTPC reps for the 2012 meeting, and they have just completed their work. If you see Dave or Phil at the meeting, say "thanks"!

Scott Johnson
Chair, SG&T Division

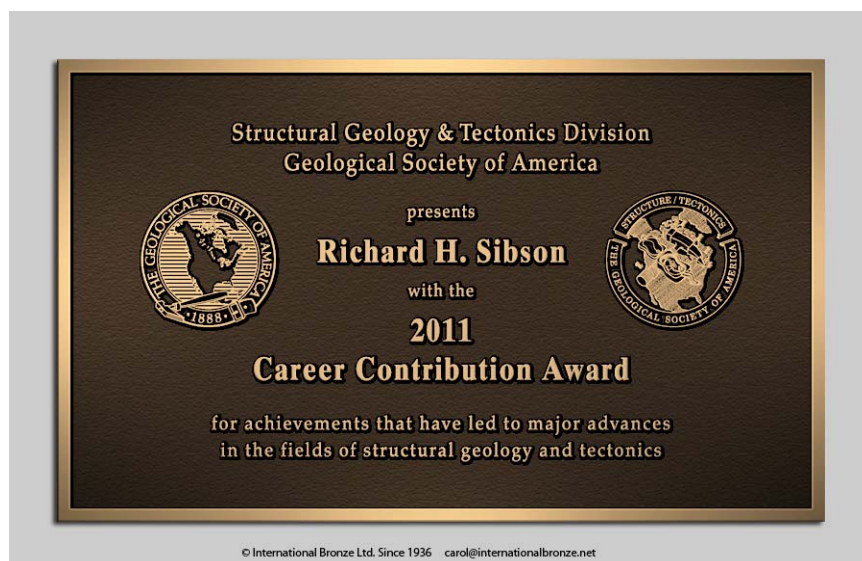
The SG&T Division Student Fund

Students represent the future of our division, and the board considers the support of students who are interested in structural geology and tectonics to be among our highest priorities. The student fund, established within the GSA Foundation, will allow us to more effectively meet this priority. Our initial goal is to grow the fund to \$80,000 before drawing interest from it. The interest from this amount, even in bad economic times, will provide more support for students than the division has ever been able to offer. The fund currently stands at around \$35,000, so we have a ways to go before realizing our goal. ***Please help.*** You can donate to the fund at the GSA Foundation web site (<http://www.gsafweb.org/makeadonation.html> and then scroll down to SG&T Student Fund). Another way to support the SG&T student fund is to buy commemorative **Rite-in-the-Rain** field notebooks from the GSA store on-line (<http://www.geosociety.org/bookstore/> - product code SGTRITR). Approximately \$7 from every book sale will go to the student fund. Both options will also be available at the annual meeting in Minneapolis. We will be in Booth 119, and will also have items at the Business Meeting as we did last year.



SG&T Division Awards

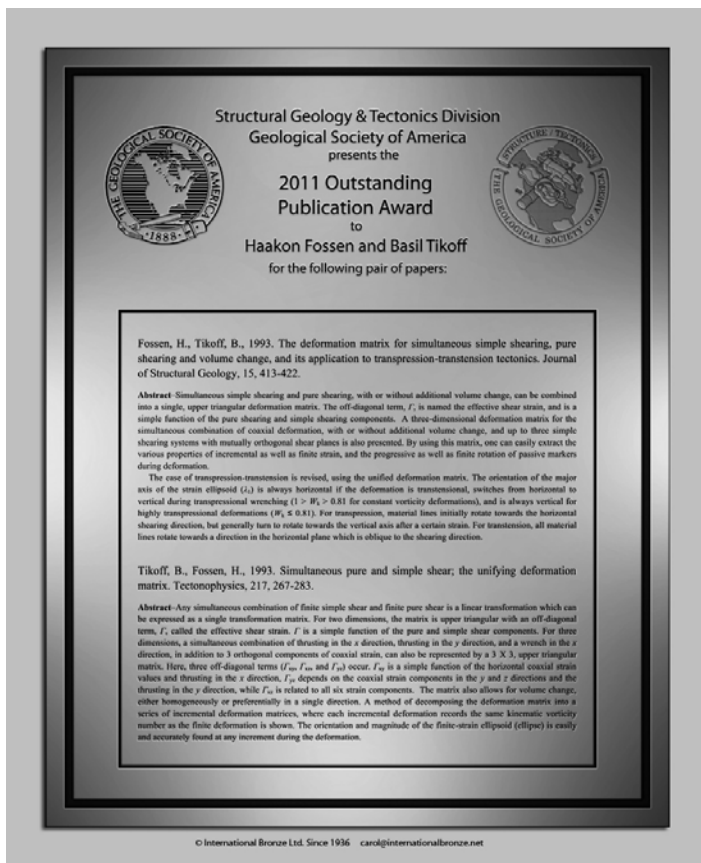
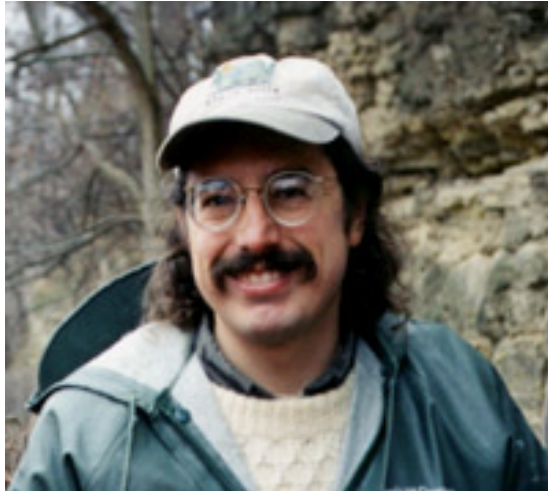
Career Contribution Award: Richard H. Sibson, University of Otago



Citationist: **Barbara John**

The Division thanks the CCA committee: Peter De Celles, Gary Axen and Steve Wojtal

Outstanding Publication Award: Basil Tikoff and Haakon Fossen



Fossen, H., Tikoff, B., 1993. The deformation matrix for simultaneous simple shearing, pure shearing and volume change, and its application to transpression-transension tectonics. *Journal of Structural Geology*, 15, 413-422.

Tikoff, B., Fossen, H., 1993. Simultaneous pure and simple shear; the unifying deformation matrix. *Tectonophysics*, 217, 267-283.

Citationist: **Peter Hudleston**

The Division thanks the OPA committee: Arlo Weil, Adolf Yonkee and Jonathan Caine

Keynote Lecture



Louis Moresi

School of Mathematical Sciences
Monash University, Australia

*Intuitive Numerical Modeling in
Structural Geology and Tectonics*

Presented at 8:05 AM on Tuesday, October 11

Session T22: Deformation of the Lithosphere:
Field Observations, Experimental
Investigations, and Numerical Studies I

2012 Annual Meeting in Minneapolis

Student Research Awards

Each year the SG&T division recognizes graduate students for excellent research proposals in the annual GSA solicitation. This year's impressive winners will be recognized at SG&T's Business Meeting and Awards Ceremony during the GSA annual meeting in Minneapolis and will receive funds to help with travel to the meeting.

Kristin Morell, Penn State University (Donald Fisher, Advisor), 'Timing and rates of exhumation of the Cordillera de Talamanca, Costa Rica due to Cocos Ridge subduction: Insights from Apatite fission track analysis'

Meridith Petrie, University of Iowa (Jane A. Gilotti, Advisor), 'High-pressure assemblages in the Yukon-Tanana terrane, Canada: Mélange or coherent slices?'

Jonathan Pratt, University of South Carolina (David L. Barbeau, Advisor), 'Thermochronologic constraints on the initiation of the Messinian salinity crisis.'

Benjamin Melosh, McGill University (Christie Rowe, Advisor), 'Field analog for the tremor source zone of the San Andreas Fault: The Pofadder Shear Zone, Namaqualand, South Africa'

2011 GSA Annual Meeting in Minneapolis (Oct. 9-12)

The SG&T Division is sponsoring or co-sponsoring a variety of theme sessions at the Annual Meeting of the Geological Society of America to be held in Minneapolis, Minnesota on October 9-12, 2011.

Below is a list of oral and poster sessions sponsored by SG&T at this year's meeting. SG&T co-sponsors a number of other sessions and information on these is available on the GSA website.

- *Structural Geology and Tectonics of Foreland Basins*
- *Multidisciplinary Studies of Fault System Deformation*
- *Tectonic Development of the Northern North American Cordillera*
- *Deformation of the Lithosphere: Field Observations, Experimental Investigations, and Numerical Studies (includes SG&T Keynote Lecturer: Professor Louis Moresi)*
- *Constraints on Strain Rates, Stresses, and Deformation Processes During Shear Zone Localization at Different Lithospheric Levels*
- *Tectonic Evolution of Eastern Oregon and Western Idaho*
- *Sedimentary Provenance and Evolution of the Continental Crust: Precambrian to Present*
- *Linking Modern and Ancient Orogens*
- *Beyond Balanced Sections: New Horizons in Structural and Mechanical Modeling*
- *Proterozoic to Modern Rifts: Sedimentary and Volcanic Processes and the Role of Inherited Structures*
- *From Nuna to Rodinia: Proterozoic Growth and Evolution of Laurentia I*
- *Exploring Subsurface Terranes and Buried Basins of Eastern and Central North America (Geology, Geophysics, and Geochronology)*
- *Neotectonics: Active Deformation of Plate Boundaries and Interiors*
- *Tectonics of the Basin and Range from Bottom to Top*

SG&T Business Meeting and Awards Ceremony

The SG&T Business Meeting and Awards Ceremony will be from 5:30 to 9:00 PM on Tuesday, October 11. Location - Minneapolis Convention Center in room 200A-C. **Please plan to attend!** As usual, we will provide food and refreshments.

ACS Petroleum Research Fund Grant Opportunities

The ACS Petroleum Research Fund and has supported "fundamental research in the petroleum field" in the geosciences, chemistry, materials science, and petroleum engineering since 1954. ACS PRF is an endowed fund administered by the American Chemical Society, and the annual grant budget derives from the investments; there is no connection between ACS PRF and the petroleum industry.

ACS PRF grants provide "seed money" for new and established researchers, to enable an investigator to obtain the initial "proof-of-concept" data set required for proposals to other agencies which support continuing research programs. ACS PRF does not provide "continuation research" funding. Indirect costs are not allowed on ACS PRF proposals, and all grant funding goes to the Principal Investigator(s).

ACS PRF considers research proposals from doctoral degree-granting departments separately from those submitted by and non-doctoral department faculty. In addition, ACS PRF has "new investigator"

grants, which are intended to enable new researchers within the first three years of their first academic appointment, to initiate a research program independent of their doctoral or post-doctoral work.

Doctoral New Investigator (DNI) and New Directions (ND) research grants are \$100,000 for a two-year grant period. The Undergraduate New Investigator grants are \$50,000 for a two-year period, and Undergraduate Research (UR) grants are \$65,000 over a three-year period.

Both the DNI and UNI “starter grants” should enable new PIs at doctoral degree-granting departments to establish an original research direction, which may then be supported by other agencies which offer continuation funding for research. Similarly, the ND and UR grants are intended to enable faculty researchers to pursue a research direction which has not been previously funded by an agency or published in refereed journals by the PI.

The Undergraduate Research (UR) grants are intended to support the development of student-oriented research involving undergraduates, in academic departments which do not award the doctoral degree. However, as long as undergraduate student stipends are part of the budget of a UR proposal, Master’s degree students may also be supported on Type UR grants, if the M.S. is the highest degree awarded by the department of the Principal Investigator.

All ACS PRF proposals receive anonymous external peer review before consideration for funding by the PRF Advisory Board, so the “submission window” closes approximately five months before the Advisory Board meeting, to enable PRF Program Managers to obtain external reviews of all submissions before they are considered by the Advisory Board.

At its May 2012 meeting, the PRF Advisory Board will consider all four research grant (ND, DNI, UR, and UNI) proposals for funding. ACS PRF will accept proposals between October 3 and 5:00 PM (Eastern time) on November 4, 2011, for consideration at the May 2012 Advisory Board meeting. While the volatility of the Stock Market continues to affect the value of the investments which provide the annual PRF grant budget, we currently assume that the September 2012 Advisory Board meeting will consider both the DNI and UNI “starter grants” and “new direction” (ND and UR) research proposals from established faculty. The submission window for September 2012 proposals will be some time in February-March 2012; please monitor our Website (www.acsprf.org) for information and updates.

Proposals to ACS PRF must be fundamental and not “applied research.” Our Website has a listing of areas deemed by the PRF Advisory Board to be applied research. In geosciences, pollution and environmental remediation studies, research on anthropogenic effects of petroleum, and groundwater hydrology have all been viewed by the Advisory Board as applied research, and thus outside the scope of the PRF Agreement of Transfer of Trust.

As part of the electronic submission process for research proposals, all applicants for ACS PRF funding must provide a 100-word statement of the “petroleum-relevance” of their research. For New Directions proposals, the Principal Investigator must also include a one-page description of their current research and how this proposal is a “new and innovative area” of research for the PI, as part of their proposal.

For questions concerning the potential relevance of research topics to the ACS PRF guidelines, or any other inquiry about geoscience proposals, please feel free to contact the Assistant Director of the ACS Office of Research Grants, Dr. Dean A. Dunn, by email d_dunn@acs.org or telephone (202-872-4083).

SG&T is on facebook!

Everyone can access our page at www.facebook.com/GSA.SGT This page will be used for periodic announcements between newsletter publication times and for sharing of news and deadlines. We now have more than 5,000 fans! The Division web site will remain the place for all official SG&T information <http://rock.geosociety.org/sgt/index.htm>

Conferences, workshops, and short courses

In this section of the newsletter we have traditionally posted announcements of upcoming conferences, workshops, and short courses that would be of interest to SG&T members. However, because this information is posted and frequently updated on the SG&T website (http://rock.geosociety.org/sgt/sgt_meetings.html), we don't feel it is necessary to post this information in the newsletters.

Comings, goings, honors and accomplishments

This is the section of the newsletter where we have traditionally posted comings and goings as well as honors and accomplishments. From now on such news will be posted on the SG&T facebook site (www.facebook.com/gsa.sgt).

Anytime you've got some news to share, just post it yourself right onto the Division facebook page. You don't have to wait for the next division newsletter, and more than 5,000 fans will read your news right away!

2011 Structural Geology and Tectonics Division Contacts

Chair: Scott E. Johnson, University of Maine, Department of Earth Sciences, Orono, ME 04469-5790; (207) 581-2142, johnsons@maine.edu

First Vice-Chair: Ron Bruhn, University of Utah, Department of Geology and Geophysics, 115 S. 1460 E, Room 383, Salt Lake City, UT 84112-0102, (801) 581-6619, ron.bruhn@utah.edu

Second Vice-Chair: Donna Whitney, Department of Earth Sciences, 310 Pillsbury Drive SE Minneapolis, MN 55455-0231 USA, Phone: (612) 626-7582, dwhitney@umn.edu

Secretary-Treasurer: Mary S. Hubbard, Utah State University, 1400 Old Main Hill, Logan, Utah 84322-1400 USA; 435-797-3686, mary.hubbard@usu.edu

Past Chair: Michele Cooke, University of Massachusetts, Geosciences Department, 611 N. Pleasant St., Amherst, MA 01003-9297; 413-577-3142, cooke@geo.umass.edu

Newsletter Editor: Dave West, Middlebury College, Department of Geology, Middlebury, VT 05753, (802) 443-3476, dwest@middlebury.edu

Webmaster: Kevin Smart, Geosciences and Engineering Division, Southwest Research Institute, 6220 Culebra Road, San Antonio, TX 78238-5166 USA; (210) 522-5859 ksmart@swri.org